

Abstract of the Disclosure

MODIFIED SILANE COMPOUNDS

5 This invention relates to the reversible protection of
hydroxy-silane functional groups by acid cleavable
protecting groups. The development of reversible
protecting groups greatly enhances the current utility of
silanes while introducing further novel applications. For
10 instance, reversibly protected silanes are of particular
value in applications where room temperature cure and/or
adhesion is of value, such as coatings, high resolution
imaging, caulks, adhesives, sealants, gaskets, and
silicones. Reversibly protected silanes can also be
15 beneficially used in reticulating agents, and in sizing
agents, tires, and release coatings. The incorporation of
reversibly protected silanes into coating resins is of
particular value. The reversibly protected silane can be
incorporated into the coating resin by polymerizing a
20 monomer containing the reversibly protected silane into the
resin or by post-addition into the coating formulation.
The reversibly protected silane remains protected under
basic conditions, such as in a coating formulation that
contains a volatile base, for instance ammonium hydroxide.
25 However, deprotection occurs under mildly acidic
conditions. Thus, as a coating formulation containing a
volatile base dries the volatile base evaporates and
deprotection occurs. This allows for controlled room
temperature crosslinking to occur with hydroxy-
30 functionalized polymers. The present invention more
specifically discloses a modified silane compound
consisting of a silane having 3 or 4 acetal moieties bonded
thereto.